

# **IOWA HIGHWAY RESEARCH BOARD**

*Minutes of February 28, 2003*

## **Regular Board Members Present**

J. Adam	D. Julius
L. Brehm	B. Keierleber
J. Byg	K. Mahoney
R. Ettema	C. Marker
T. Fonkert	M. Nahra
R. Gould	J. Selmer
L. Greimann	C. Van Buskirk

## **Alternate Board Members Present**

J. Krist for G. Parker	C. Schloz
J. Berger	D. Short
J. Ites	A. Smith
L. Jesse	R. Younie
R. Schletzbaum	

## **Board Members With No Representation**

None

## **Secretary**

M. Dunn

## **Visitors**

Tom Stoner	<i>Harrison County</i>
Jenny Balis	<i>FHWA</i>
Sara Buseman	<i>Iowa Department of Transportation</i>
Ed Engle	<i>Iowa Department of Transportation</i>
Sandra Larson	<i>Iowa Department of Transportation</i>
Bob Steffes	<i>Iowa Department of Transportation</i>
Justin Doornink	<i>Iowa State University</i>
Charles Jahren	<i>Iowa State University</i>
F. Wayne Klaiber	<i>Iowa State University</i>
Tom Maze	<i>Iowa State University</i>
Brent Phares	<i>Iowa State University</i>
Jacob Thorius	<i>Iowa State University</i>
David White	<i>Iowa State University</i>
Terry Wipf	<i>Iowa State University</i>
Steve Andrle	<i>Iowa State University/CTRE</i>
E. Tom Cackler	<i>Iowa State University/CTRE</i>
Dale Harrington	<i>Iowa State University/CTRE</i>
Ed Jaselskis	<i>Iowa State University/CTRE</i>
Omar Smadi	<i>Iowa State University/CTRE</i>

**The meeting was held in the Large Materials Conference Room at the Iowa Department of Transportation, Ames, Iowa. The meeting was called to order at 9:05 A.M. by Dr. Rob Ettema.**

**Agenda review/modification**

- None

**Approval of the minutes**

- Mark Nahra moved to approve the minutes from the January 31, 2003 meeting with no additions or corrections. John Adam seconded. Carried with 15 yes, 0 no, and 0 abstaining.

**Final Report TR-435, “Thin Maintenance Surfaces - Phase II”**

- Dr. Charles Jahren, Iowa State University, presented the project overview, objectives, tasks, section methodology, test section location map and layout, photos and information on specific sites, graphs, refined guidelines, conclusions, recommendations, and suggestions on IMs and Specifications regarding the Phase II research.
- The traffic counts on the highways involved in the research were reviewed:
  - US 69: Approximately 4000 vehicles per day
  - US 218: less than 2000 vehicles per day
  - US30: 3000-4000 vehicles per day
  - US 151: Approximately 5000 vehicles per day
- These overlays will be monitored for approximately another five years (ten years total).
- Dr. Jahren pointed out that different parts of the report could be done as stand-alone documents to help with technology transfer and ease of use. The following documents were passed around as examples of this:
  - *Aggregates for Thin Maintenance Surfaces*
  - *Asphalt Binders for Thin Maintenance Surfaces*
  - *Qualitative Guidelines for Thin Maintenance Surfaces*
  - *Quantitative Guidelines for Thin Maintenance Surfaces*
  - *Seal Coat Design Guide for Iowa's Asphalt Pavements*
- John Selmer moved to accept the final report. Doug Julius seconded. Carried with 15 yes, 0 no, and 0 abstaining.

**Final Report, TR-444, “Demonstration Project Using Railroad Flatcars for Low Volume Road Bridges”**

- Dr. F. Wayne Klaiber, Iowa State University, reviewed the background, problem statement, potential solution of building railroad flatcar bridges, research objectives, tasks, selection criteria, pictures showing different construction stages of the two bridges, field testing information, analytical results, conclusions, acknowledgements and needed research.
- There was a more detailed discussion on the cost savings of this type of bridge construction and the availability and the specifics of the flatcars. The appendix of the report lists four suppliers.

- Mark Nahra moved to accept the final report. Christy Van Buskirk seconded. Carried with 14 yes, 0 no, and 1 abstaining.

#### **Proposal, “Embankment Quality, Phase IV”**

- Dr. David White, Iowa State University, gave background information and reviewed Phases I - III. He then presented the problem statement; research objectives; evaluation plan; implementation at state, county and city levels; research team; use of new tools; time frame and cost for the 2 pilot projects for Phase IV.
- Support was expressed by the Board for this type of research due to the major application of dealing with unsuitable soils. This topic was one of the top priorities of the Board for FY 2002-2003 and those who were involved or familiar with the development of the previous phases and background work are proposing to continue the research.
- The tool discussed in the presentation (the Dynamic Cone Penetrometer - Data Acquisition System and Soil Moisture Resistivity Probe (DCP-DAS®/SMR)) was not factored into the projects budget. Final information had just come into Dr. White. The long term vision for the program is that the earthwork contractors are either going to have to hire someone to do their testing or they will have to invest in the capabilities themselves. An arrangement can likely be worked out with the contractor. The cost is approximately \$9000. With this system, it would be feasible to test for everything that is needed right in the field.
- Charles Marker moved to approve the proposal with the funding split of 70% Primary, 15 % Secondary and 15% Street. John Adam seconded. Carried with 15 yes, 0 no, and 0 abstaining.

#### **Proposal, “Performance Evaluation of Steel Bridges: Phase II”**

- Dr. Brent Phares, Iowa State University, reviewed the objectives, the proposed bridges, the proposed end products for the state and local systems, and the schedule and budget of the proposed Phase II research.
- Mark Nahra moved to approve the proposal with the funding split of 75% Primary, 20 % Secondary and 5% Street. Kevin Mahoney seconded. Carried with 14 yes, 0 no, and 1 abstaining.

#### **Proposal, “Statistical Analysis of Highway Needs Condition Data: Manual vs. Automated”**

- Dr. Omar Smadi, Iowa State University/CTRE, presented the background, objective, urgency issues, tasks, time frame and budget of the proposed research.
- This research is tied to one of the priority topics of the Board for FY 2002-2003 that has been put on hold until August. The Secondary Road Fund Distribution Advisory Committee has been established to review alternatives to the highway needs study. This research will provide needed information for that committee to make its decision in August.
- Lyle Brehm moved to approve the proposal with 100% Secondary funding. Mark Nahra seconded. Carried with 15 yes, 0 no, and 0 abstaining.

### **Problem Statement, “Field Evaluation of Compaction Monitoring Technology”**

- Tom Cackler, Iowa State University/CTRE, discussed the vision, background, completed work, and research priorities and objectives of the Partnership for Geotechnical Advancement. This led into the problem statement reviewing the objectives, the research plan for Phases I (this research) and II, the funding breakdown for Phase I, and the funding potential from FHWA for Phase II.
- This is brought to the Board at this time due to the current available funding partnership.
- It was requested that this research tie closely with the research being done on embankment quality by Dr. White. Dr. White is a Co-Principal Investigator on this project. It was expressed that it would be logical to compare other existing and emerging process control requirements and equipment, such as the dynamic cone penetrometer and the sheep's foot walkout (not just the standard Proctor Test), with the work being done in this project. It was recommended that this idea be incorporated into the proposal.
- Proprietary issues were discussed. Any software, and/or instrumentation developed to assist with data capture and processing from the Caterpillar equipment would be adaptable to other non-Caterpillar equipment. A non-disclosure agreement has been signed between Caterpillar and ISU. The Iowa DOT - ISU contract would address these proprietary ownership issues.
- Charles Marker moved to approve the problem statement and have a proposal brought back to the Board, which would address the proprietary issues plan and the incorporation of work between Dr. White's embankment quality research and this research. Christy Van Buskirk Seconded. Carried with 15 yes, 0 no, and 0 abstaining.

### **Annual review of the IHRB Business Plan and attachments**

- Mark Dunn mentioned that all the changes that had been done were highlighted in gray. One of the changes included the consistent use of the terms “problem statement” and “proposal” throughout the document.
- The aspect of allowing other proposals to come before the Board that are not involved in the prioritization process was clarified for those unfamiliar with the initial intent. The percentages showing the breakdown of solicited, continued from previous research, and non-solicited projects for FY 2002-2003 was listed in the summary of Primary, Secondary and Street funds which was available at the meeting.
- Mark Dunn will check on clarifying the language “appointed by” stated in the *Organization of the Board* section. He will also look into the way the language reads in the *Background* section regarding “an advisory board responsible for assisting the Iowa DOT (more inclusive?) in the development...”
- Due to an issue in the past, it was recommended that information on the Secondary Road Research Coordinator's position be added to the Business Plan under the *Meetings and Staff Support* section.
- The changes that were made from last meeting to this meeting were felt to be appropriate.

- The Business Plan is on the Materials-Research web page at the following address:  
[http://www.dot.state.ia.us/materials/research/ihrb/iowa\\_highway\\_research\\_board.html](http://www.dot.state.ia.us/materials/research/ihrb/iowa_highway_research_board.html).  
Select “Business Plan” from the menu box on the right side of the window. It will be updated once the final changes have been approved by the Board.
- Mark Dunn will look into and make the recommended changes and bring the Business Plan back to the April meeting.

### **Brainstorming Workshop to Develop Strategic Research Needs for FY 03-04**

- Items from the following four focus groups were handed out as part of the brainstorming session:
  - The Bridge Engineering Center
  - Partnership for Geotechnical Advancement
  - Center for Portland Cement Concrete Pavement Technology
  - Iowa's Asphalt Pavement Program
- The Board members and alternates made suggestions for research topics to be considered for requested research. After the members and alternates, the room was opened up for suggestions from others. These topics, along with the topics that are submitted to Mark Dunn separately from the brainstorming session, will be grouped appropriately and sent out to the members and alternates for prioritizing.
- Any other research topics of interest for next fiscal year’s priorities should be gotten together and given to Mark Dunn prior to the list being sent out for initial prioritization.

### **Discussion on Options for the Upcoming Traveling Meeting in May**

- The following ideas were discussed as options for the location of the traveling meeting and will be discussed in more detail at the April meeting:
  - Mark Dunn mentioned that it would be interesting to observe an active paving project that is using the longitudinal joint former and view some completed pavements to see the finished product. Brian Keierleber offered to host the meeting at Fontana Park if the paving in his area times well with the meeting.
  - Dr. Ettema offered hosting the meeting at The University of Iowa and having a tour of the remodeled hydraulics lab.
- Dr. Greimann offered to host a regular (not traveling) meeting at CTRE later in the year and offer a tour of the facility.

### **New Business**

- For general information only, it was mentioned that the Stringless Paving Pre-meeting Conference is scheduled to be held at The Scheman Center at ISU on Tuesday, March 4, 2003.

**Dr. Rob Ettema adjourned the meeting.**

**Date of Next Meeting: THE NEXT MEETING WILL BE HELD FRIDAY, APRIL 25, 2003  
AT 9:00 A.M. IN THE LARGE MATERIALS CONFERENCE ROOM AT THE IOWA  
DOT, CENTRAL COMPLEX, IN AMES, IOWA.**

---

Mark Dunn, IHRB Secretary